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(54) Improved container and closure therefor.

(57) A container and/or closure therefor is provided with a design (16) comprised of a generally repetitive, multi-colored geometric pattern formed in part of decodable indicia, the indicia being unrecognizable in normal, unfiltered light but decodable and therefore recognizable in filtered light.

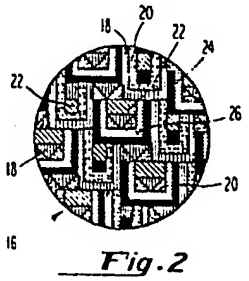

Fig. 2

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IMPROVED CONTAINER AND CLOSURE THEREFOR

The present invention generally relates to containers and/or closures therefor, and in particular, it relates to an improved container and/or closure upon which indicia have been lithographed.

For many years, containers and/or closures therefor have been provided with messages thereon, which messages have been applied by lithography. The aforementioned lithographed messages have been used for labelling so as to indicate the brand names, ingredients, etc.

It has been suggested that containers and/or closures now be provided with decodable messages or indicia which are generally unrecognizable in normal light, but which are visible under filtered light. Such indicia may be applied to aid in the marketing of the containers' contents. For example, it has been proposed that a purchaser be given a prize or reward if a container or closure therefor is presented to a merchant or distributor, which container or closure includes a particular message or indicia when decoded by viewing through a type of light filter.

Attempts to apply such indicia to containers and/or closures, however, have generally been unsuccesful. One such attempt has employed a multi-colored non-repetitive geometric pattern lithographed on a surface of a container closure. The aforementioned pattern was to have been formed in part of decodable indicia which were unrecognizable under normal light, but recognizable under filtered light. However, this effort has generally failed for the reason that the decodable indicia were detectable or decodable under normal light or, alternatively, were not sufficiently visible when viewed under filtered light.

It should be apparent that, if a decodable message is visible under normal, unfiltered light or invisible under filtered light, utilization of a container and/or closure employing such indicia for marketing promotion is impossible.

The application provides a container and/or closure bearing a message which is, in fact, substantially invisible under normal light but plainly apparent when viewed with filtered light. The foregoing is achieved by the imprintation of a design on at least

one surface of the container or closure which design includes a multi-colored generally repetitive geometric pattern, which pattern includes coded indicia which are decodable under filtered light.

In the preferred embodiment, the pattern is formed of five colors, with the decodable indicia being formed in only two of those five colors. When viewed under a light filter, the decodable indicia is readily apparent, but is substantially invisible under normal, unfiltered light.

The present invention will be more fully understood by reference to the accompanying drawings, in which:

Fig. 1 is a perspective view of a container closure or bottle crown;

Fig. 2 is a plan view of a design to be lithographed on one surface of the closure shown in Fig. 1 and having a pattern visible under unfiltered light which pattern is formed in part of decodable indicia not recognizable in unfiltered light, and representing one embodiment of the present invention;

Fig. 2A is a plan view of the design of Fig. 2 when viewed under filtered light; the decodable indicia being apparent;

Fig. 3 is a plan view of another design representing a second embodiment of the present invention;

Fig. 4 is a plan view of still another design representing a third embodiment of the present invention; and

Fig. 5 is a perspective view of a container upon which the pattern of Figs. 2 trough 4 may be displayed.

Shown in Fig. 1 is a bottle closure or crown shown generally at 10. The closure 10 is typically stamped or otherwise formed from metal such as tinplate or tin free steel. The crown 10 is formed so as to have an outside surface 12 and an inside surface 14. Typically, labelling or other information is provided on the outside surface 12 of the closure 10. Messages, designs and other information may also be provided on the inside surface 14 thereof.

In accordance with the present invention a design such as shown generally at 16 in Fig. 2, may be lithographed on either the outside surface 12 or on the inside surface 14 of the closure 10.

Preferably, a design such as is shown in Fig. 2 is placed on the inside surface 14 of the closure 10 with labelling information being provided on the outside surface 12 thereof. The design 16 shown in Fig. 2 comprises a pattern which is visible under unfiltered light, but which is formed in part of decodable indicia which are substantially unrecognizable under unfiltered light, but which become recognizable when viewed in filtered light. As shown in Fig. 2, the design 16 comprises a generally repetitive pattern, and, more particularly comprises a generally repetitive geometric pattern. The pattern shown in Fig. 2 is a multi-colored pattern and preferably is formed in five colors such as, for example, red, blue, black, yellow and green. In the design 16 shown in Fig. 2, those regions 18 are lithographed in red, while those regions 20 are lithographed in yellow. Those regions shown at 22 preferably comprise green as shown. Those regions marked as 24 are preferably black, while those regions shown at 26 are blue.

The design 16 shown in Fig. 2, in the five colors 18 through 26 as described above, includes a pattern recognizable under normal light. The design 16 shown in Fig. 2 comprises a multi-colored repetitive geometric pattern which is formed, in part, of decodable indicia which are substantially unrecognizable in normal light. However, these decodable indicia may be detected by viewing the design 16 through a filter such as, for example, a red, translucent screen made from acetate. When the design 16 of Fig. 2 is viewed through such a screen, the decoded indicia shown in Fig. 2A will be readily apparent. As will be seen from viewing Fig. 2A, the decodable indicia of Fig. 2 constitutes the letter P shown generally at 28, when decoded by viewing through filtered light. When a red translucent filter is utilized, greens, blues and blacks in normal light are absorbed by the filter and all appear as black. Moreover, reds and yellows in normal light are transmitted by the filter and appear as red, the color of the filter. Accordingly, when viewed in filtered light with a red translucent filter, the letter P shown at 28 in Fig. 2A appears as a black figure against a red background.

It has been discovered that by forming the design 16 of Fig. 2 as a generally repetitive geometric pattern, the decoded indicia shown in Fig. 2A are substantially invisible when viewed in normal light.

By generally repetitive is meant that the pattern 16 is formed of individual elements. The shapes of at least some of the individual elements tend to repeat in unfiltered light across the field of view although the colors of the individual elements need not necessarily repeat. The colors of individual elements are selected such that when viewed in filtered light the pattern does not repeat, thus rendering the decodable indicia visible. It is hypothesized that when confronted with a visual stimulus, a viewer will continue to search for and assimilate information until a pattern is recognized. However, by presenting decodable indicia as part of a design which is a repetitive geometric pattern, the eye of a viewer does not seek to organize a visual stimulus once a repetitive pattern is perceived, thus insuring that the decodable indicia remains unperceived. When decodable indicia are part of a larger design which is not repetitive or not geometric the viewer continues to search until the decodable indicia is perceived from the larger design.

Referring now to Fig. 3, a design 30 is shown generally which comprises another embodiment of the present invention. Those regions of the design 30 which are preferably formed in red are shown at 18. Those regions which are preferably formed in yellow are shown at 20. Those regions which are preferably formed in green are shown at 22, while those which are preferably formed in blue are shown at 24. Those regions preferably formed in black are shown at 26, while white regions are shown as such. When viewed in normal light, the design 30 of Fig. 3 may be seen to be a repetitive geometric pattern, but when viewed in filtered light, such as for example, through a red translucent screen, indicia consisting of the number 5 is readily apparent.

The pattern 40 shown in Fig. 4, like that shown in Figs. 2 and 3, is also a geometric pattern. The design shown at 40 in Fig. 4 is also a multi-colored design containing regions of colors bearing similar numbers to regions of like color shown in Figs. 2 and 3. The design 40 shown in Fig. 4 includes decodable indicia visible under filtered light, but substantially invisible under normal unfiltered light. The decodable message of Fig. 4 may be seen by viewing the design 40 through a red, translucent filter wherein the shape of a bottle becomes readily apparent.

Referring now to Fig. 5, a container 50 is generally shown. The container 50 may comprise a beverage container formed from aluminum, steel, or tinplate, either by drawing and ironing, or by conventional side seaming methods. Preferably lithographed on the exterior surface 52 of the container 50 is a design such as one of the designs shown in Figs. 2 through 4. The design to be lithographed on the exterior surface 52 includes a repetitive geometric pattern visible under unfiltered light which pattern is formed in part of decodable indicia visible under filtered light but substantially invisible under unfiltered light.

The lithography which is placed on the closure 10 shown in Fig. 1 or upon the container 50 shown in Fig. 5 is accomplished using standard techniques. For example, in applying lithography to closures, sheet metal such as tinplate is first coated with a white base coat. Next, those portions of the design of Figs. 2-4, which are to be formed in either yellow or green are lithographed in yellow. Next, red portions are lithographed. Those portions to be blue or green are lithographed in blue, with green areas being formed by the interaction of blue and yellow regions. Finally, black regions are lithographed. The lithographed sheet metal is next coated with lacquer, dried and stamped.

While particular embodiments have been shown and described, it will, of course, be understood, that various modifications may be made without departing from the principles of the invention. The appended claims are, therefore, intended to cover any such modifications within the true spirit and scope of the invention.

CLAIMS

1. A container closure having:

an inside surface and

an outside surface, at least one of said surfaces being provided with a design thereon, said design comprising:

a pattern visible under unfiltered light, said pattern being formed in part of decodable indicia recognizable under filtered light, but substantially unrecognizable under unfiltered light.

2. The closure of claim 1 wherein said pattern comprises a generally repetitive pattern.

3. The closure of claim 1 wherein said pattern comprises a generally repetitive geometric pattern.

4. The closure of claim 1 wherein said pattern comprises a multi-colored, generally repetitive geometric pattern.

5. The closure of claim 4 wherein said pattern is formed in five colors.

6. The closure of claim 5 wherein said pattern is formed in five colors and said decodable indicia are formed in three of said five colors when viewed in unfiltered light.

7. The closure of claim 6 wherein said pattern is formed in blue, black, green, yellow and red, and said decodable indicia are formed in blue, black, and green when viewed in unfiltered light.

8. The closure of claim 7 wherein said filtered light decodes said indicia as a black figure against a red background.

9. A container having, an inside surface and an outside surface, at least one of said surfaces being provided with a design thereon, said design comprising:

a pattern visible under unfiltered light, said pattern being formed in part of decodable indicia visible under filtered light but substantially invisible under unfiltered light.

10. The container of claim 9 wherein said pattern comprises a multi-colored, repetitive geometric pattern.

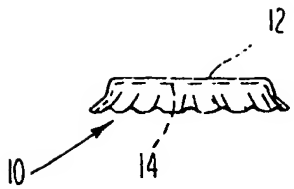

Fig. 1

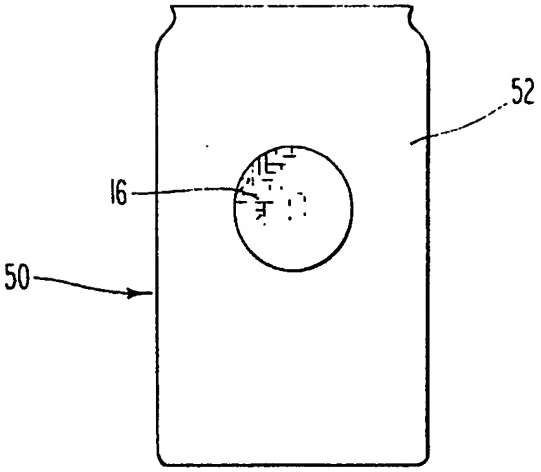

Fig. 5

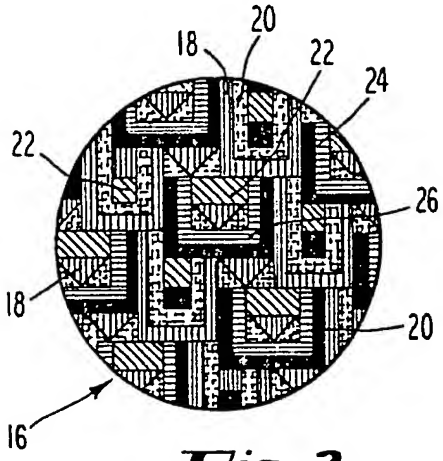

Fig. 2

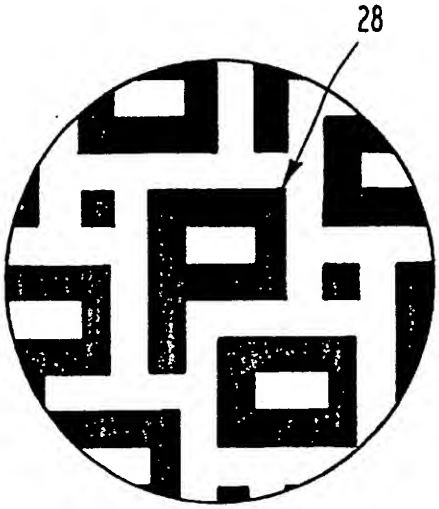

Fig. 2A

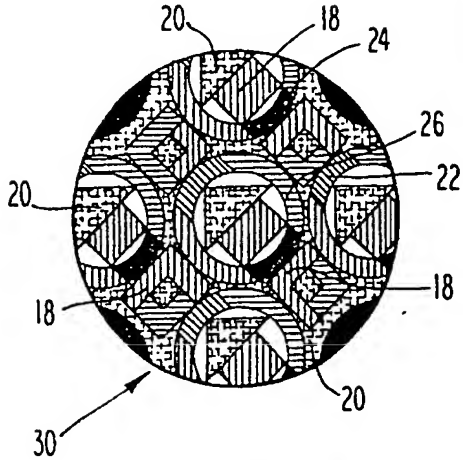

Fig. 3

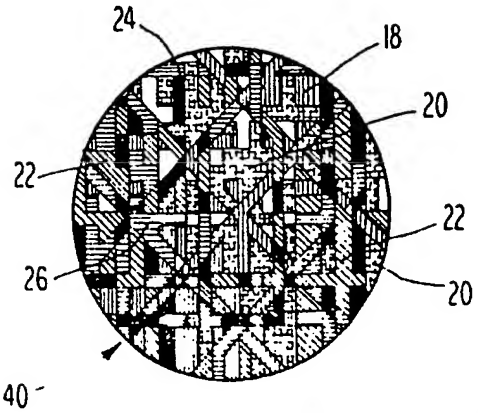

Fig. 4

European Patent Office

EUROPEAN SEARCH REPORT

Application number

EP 82 20 0658

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
Y	US-A-3 628 271 (MORRIS) * Whole document *	1-4,9, 10	B 65 D 25/00 B 65 D 51/24 B 44 F 1/12 G 09 F 3/00
Y	US-A-1 428 278 (DOW) * Whole document *	1-4,9, 10	
Y	US-A-1 692 405 (FREEMAN) * Whole document *	2-4,10	
A	US-A-3 675 948 (WICKER) * Column 1, line 58 - column 2, line 11; column 4, lines 11-70; figures 4-6 *	1	
A	GB-A- 8 577 (BAWTREE)(AD1909) * Whole document *	1	TECHNICAL FIELDS SEARCHED (Int. Cl. ³) B 65 D G 09 F B 44 F B 41 M

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	01-09-1982	MARTENS L.G.R.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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P : intermediate document

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E : earlier patent document, but published on, or after the filing date
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